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# Evidencing Embodied Participatory Design

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## ABSTRACT

This paper presents an exploratory, collaborative project and the visualisation method developed to communicate the fragmented but embodied experiences of the three participating designers. It introduces the *Electric Corset and Other Future Histories* project, and reflects on the artefacts that enabled diverse practices to be shared between the designers, and the emergence of a layered, expressive visual narrative as both a work in its own right, and as a tool for communication. It finishes with a discussion of the issues in communicating experience in a participatory design research project with mental health service users, and how learning from the *Electric Corset* visualisation has helped us evidence individual experience where the usual AV capture techniques are not appropriate.

## Author Keywords

Collaborative practice; tacit knowledge; design artefacts; wearable technology; process; mental health; vulnerable user groups

## ACM Classification Keywords

K.4 Computers and Society: Public Policy Issues: Ethics.

## THE ELECTRIC CORSET AND OTHER FUTURE HISTORIES

The *Electric Corset and Other Future Histories* project brought together three practitioners from creative backgrounds to demonstrate the wealth of historical artefacts and references available to designers of smart textiles and wearable technologies. We aimed to develop an anthropological or cultural archeological approach to our understanding of wearables, linking the embodied experience of wearing and dressing, with pragmatics of care, and cultures of making.

The project took the form of a collaboration with Judith Edgar, curator of the Costume and Textiles Museum housed at Newstead Abbey by Nottingham City Museums and

Galleries. We selected, over a number of visits to the archive, three broad categories of garment to exhibit, initially at the Crafting Anatomies exhibition at Bonington Gallery, Nottingham, UK [3]. These were corsets, collars and a footman's livery.



Figure 1. Corsetry adverts inspired this project, with their technological promises and relationship with the human body.

We were interested in garments that had particular shaping and tailored fits, clothing that had specific purposes such as uniforms or items that had removable parts for laundering and body adornment e.g collars and cuffs (including lace). Corsets and other shaping underwear were of interest due to their close relationship with the body while reminding us of changing cultural norms; they are at once records of the phenomenological act of wearing [5], and of the culturally constructed body, created by external technologies. Ihde maintains the possibility of a ‘third body’ constituted by the embodied relationship of, in and with technology [7].

Items with removable parts for laundering and bodily enhancement e.g. collars and cuffs (including lace) were of interest to us because one of the common factors cited for the slow mainstream uptake of wearables is the difficulty in caring for them; we think historical cultures of garment care and construction could provide the sector with a rich seam of inspirational models of practice here. Three men's starched collars and a woman's beaded collar from the 1920s were selected as examples of how care systems and fashion coincide; practices of wear included changing the collar shape for evening attire, and collars were changed far more often than the shirt. In one example it is possible to

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see the Utility Clothing mark (a double ‘C’ form, looking like two coffee beans) – this was a mark given to pieces that had been made in accordance with the austerity measures during the Second World War – this collar had been made within restrictions on the amount of material used. Collars may be an obvious example of items that are detachable and cared for separately, but we found that sleeves could also be a separate part of the garment, like an “extended glove” [4:60]; systems of remaking and fitting and ownership are another important area for further exploration.



Figure 2. Footman's livery, circa 1890

Clothes for specific purposes such as uniforms and sportswear were interesting because they often involve regalia and other identifiers of achievement, class, or belonging to groups; there is also a wealth of textile construction technique to be found in the creation of regimental ornaments and decoration, including the use of gold and silver fibres. In terms of identity, we found this footman's coat from 1897 was from the livery of one particular local household – it was possible to tie it into the social history of class and land ownership of the area. The complexity and layering of garments like these, and the relative paucity of a person's wardrobe compared to contemporary consumption patterns, meant that a single item, like the coat, was the very embodiment of value – “the body of value” [11:10].

### EMBODIED LANGUAGE

We also became excited about the historical language of dress; there were contextualised terms for all sorts of fastenings, structures and decorative elements, for parts of garments, and for functional items like hats and shoes: golden griffins, galoon, bunshes and aglettes brought to mind poetry, in the feel of the words and their relationship to lived experience. Literature also offers us a rich seam for further research: “A short pair of jumps, half an ell from your chin, To make you appear as one just lying-in; Before your brest pin a stomacher bib on; Ragout it with curlets of silver and ribbon” [2].

### SHARING CREATIVE PRACTICE

Following the Newstead Abbey visit, a workshop was devised to allow experiment and exploration with the research materials, including photographic material from the archives and of the garments, personal hoards of fabrics, favourite books, old sketchbooks and design drawings, and e-textile components. During this first session, we unearthed themes in our own practices, asked about each other's inspirational material, and faced up to a wealth of starting points and wishful thinking [15].



Figure 3. playful layering with components, materials, and pattern pieces

### DEVELOPING SHARED PRACTICE

In subsequent sessions, the practitioners brought images, photocopies, psuedo-pattern cutting fragments, electronic components and fabrics into the studio to work directly on the mannequin. This method of developing creative practice textiles and fashion has previously been explored by Kettley and Downes [9], and proved useful as it is fast, reflexive rather than reflective, and provides a common focal point for joint decision making by creative practitioners more used to autonomy. The fragile nature of the archived garments, and the processes by which they can be extracted from storage, mean that historical garments may be hard to work with in an embodied way; they cannot be handled, manipulated and recombined. To get around this problem, we worked with blown-up copies of our photographs, and began to develop a coherent visual language of degraded photocopies, greys, transparencies and textural layers. We sought to transfer our imagined embodied experience with the garments into this visual language.

### COMMUNICATING EMBODIED PRACTICE

Following the workshop, an additional challenge was to communicate these potential wearable concepts. We considered alternative modes of communication that would capture the multiple aspects of the playful explorations in the studio. The nature of the workshop orientated the decision to play with film. In doing so, the practitioners used the documentation of the workshop to form the basis



of the film. The artworks produced, were further worked on with digital manipulation software. Each frame of the film became a piece of work, layered with the results from the workshops and input from all three practitioners, including text treated as visual content, contextual images, and collections of materials.

The resulting movie was shown alongside the garments at Crafting Anatomies, curated by Rhian Solomon at the Bonington Gallery in January 2015 [3]. The garments were delivered by the curator and an assistant, unpacked carefully from their archive boxes and acid-free tissue by gloved hands. They were positioned in perspex cases, the footman's coat in a custom made wall-mounted box, hanging to one side under the weight of its braiding. The archive identity tags, normally tucked out of site by the curators, we arranged to form part of the exhibit narrative.

### LEARNING FROM THE ELECTRIC CORSET

The Electric Corset was an approach to exploring and communicating (imagined) lived experience with historical garments, and with contemporary materials. It was also a pragmatic response to the fragility of the archived pieces, which we could not touch, and we could not invite our audience to touch; instead the visualisation and the decisions made in the exhibit, such as the positioning of the archive tags, were strategies for embodied communication.

### Evidencing impact with mental health service users

We are currently working with mental health service users in the UK as part of the project, An Internet of Soft Things [1]. We are working with Nottinghamshire Mind Network to co-design eTextile objects and services. These objects and services may be 'for' mental wellbeing, but this isn't a requirement. We are trying to give people a voice in envisaging a future infused with technology – the Internet of Things. These are people who are used to not being heard in society; and yet they are the people who are most likely to lose any agency they have in an Internet of Things. Therefore we feel it is important we design it with them, and we are using a generative, participatory methodology [14] informed by the Person-Centred Approach of Carl Rogers [10]. Because of the nature of mental health service provision in the UK, our project partners, Mind, represent a particular kind of community. People come of their own volition, and can access one-to-one therapies, or attend groups. They have very often been through the National Health Service and may have experienced a course of Cognitive Behavioural Therapy or drug treatment, and they may be on medication. Over seven weeks, we worked with a pre-existing group, who meet on a Tuesday to do art activities. This was not groupwork in the therapeutic sense; rather, people can work together if they like but there is no shared discussion about personal experience. Because the workshops were skills based, the group expanded to include the facilitators and researchers, and we all became co-researchers and group members.

According to the Person-Centred Approach, a client is able to bring personal experience as and when an individual is ready to share it (in contrast for example to a psychodynamic process in which the lived experience is deliberately foregrounded and re-lived). This disclosure tended to happen in smaller pairs or dynamic triads as the workshop facilitators moved around the group, and pairs formed as people needed practical skilled help to make the eTextiles (soft things).

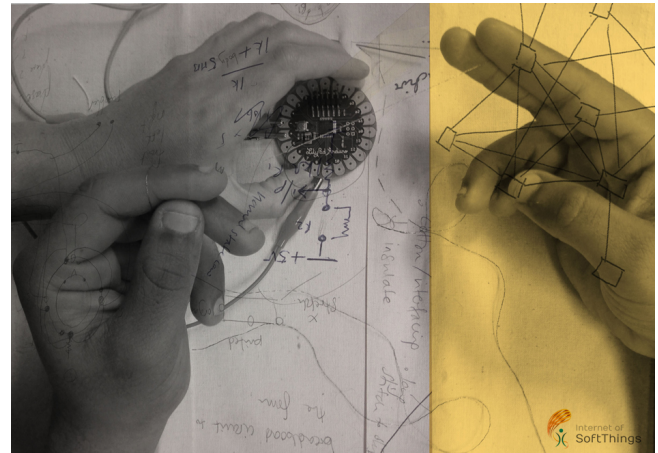


Figure 4. exploratory layering of workshop images

The participating service users were happy to be in the soft things workshops; we witnessed significant personal impact on individuals, who responded to our attempts to facilitate a non-judgemental environment, and were surprised at what they could achieve with this new technology [6]. However, this personal impact is hard to evidence; by definition we need to protect the identities of the people involved, and we can't show you happy smiling faces because our participants gave informed consent in which we would only collect images of their hands. To give an example, we know that one of our participants was feeling engaged and comfortable with us because he took one cigarette break in three hours, rather than leaving the room every ten minutes, but we could not have learnt this from AV capture or photographs. Instead we learnt this in reflective discussion with the Mind managers after the workshop event. The participant's own responses to feedback sheets and to short one-to-one discussions using the Recovery Star [12] would appear in transcriptions to be reticent, monosyllabic and unforthcoming; what is missing is his lived experience, and our experience of that with him.

Evidencing impact is of course a cornerstone of funded research, and an expectation of scientific methodologies and contributions to academic knowledge. It also underpins the efforts of service providers like Mind to raise funds to deliver effective services, and yet evidencing their effectiveness is inherently problematic. Given the very varied nature of individual communication within these communities, however, such evidence is hard to collect and communicate. We are now developing visualisations with

the Mind workshop participants to try address this issue, while remaining true to their experience.

This is a creative group of people, and there are ways to represent ourselves while retaining control of our levels of disclosure; the men in the group had already produced mixed media self-portraits, which we admired every week as they hung on the wall. This has led us to work with Isabel Jones of the participatory arts charity Salamanda Tandem [13]; Jones has developed a participatory form of arts practice in which people with different abilities are co-producers and co-owners of the work [8]. Using the Electric Corset visualisation as a starting point, we have been able to describe the kinds of layering and approach to a coherent visual language we feel works well when video footage is not available, and when layers of experience are only intermittently revealed.

### CONCLUSION

Our efforts in working with visualisation techniques to capture and communicate embodied, lived experience with fragile objects and vulnerable people are ongoing. This paper is accompanied by the Electric Corset, and the Mind soft things workshop visualisations, available through the Internet of Soft Things project website [1]. Planned work includes creative communication of participants' experience of networking workshops, and of excursions with soft networked objects 'in the wild'. These visualisations will form the backbone of our claims for impact, and we hope to influence the nature of 'evidence' in design research with people with varied abilities.

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